

REMARKS

An Excess Claim Fee Payment letter and fee are attached for one (1) excess claim. Claims 1-21 are pending in this Application. Applicants have amended claims 1 and 6-10 to define the claimed invention more particularly. Applicants have added new claims 11-21 to claim additional features of the invention and provide varied protection for the invention.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicants specifically state that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

With respect to the prior art rejections, claims 1-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Niikawa (US Patent No. 7,075,569) in view of Matherson et al. (US Patent No. 7,233,352).

Applicants respectfully traverse these rejections in the following discussion.

I. THE CLAIMED INVENTION

The invention of claim 1, for example, is directed to a digital camera for photo-electrically transducing an object field formed by an image pick-up lens into an image signal representing the object field.

The digital camera includes an image sensor for generating an image signal representing the image of the object field formed, a signal processor for processing the image signal representing the image of the object field to produce image data, an output circuit for outputting the image data produced, a controller responsive to operating information for controlling the image sensor, the signal processor and the output circuit to generate a shading correction condition and a white balance adjustment condition or to correct the image signal representing the image of the object field, a storage for storing the adjustment condition and the shading correction condition, and an operating unit for receiving the operating information corresponding to an operation by an operator.

The controller produces, upon recognition that the operating information commands manual white balance adjustment controlling calibration imaging for imaging an object placed in front of the image pick-up lens, generates the shading correction condition and the

white balance adjustment condition for correcting the image signal to be generated at a time of actual imaging, based on the image signal generated by the image sensor at a time of the calibration imaging, and causes the produced shading correction condition to be stored in the storage. The controller reads out, when commanding the actual imaging to cause the generated image signal to be processed by the signal processor, the shading correction condition and the white balance adjustment condition stored in the storage to send out a read-out correction conditions condition to the signal processor. The signal processor corrects shading of the image signal for the actual imaging, in accordance with the shading condition supplied from the controller, and also correcting white balance of the image signal for the actual imaging, in accordance with the white balance adjustment condition supplied from the controller.

This feature is important because carrying out the white balance adjustment and the shading correction separately necessitates a complicated operation (e.g. see Application paragraph [0005]).

In a conventional digital camera, as described in the Background of the present Application, a processing procedure of sequence for adjusting the white balance or correcting the shading is carried out. Also, in actual imaging, the shading may be changed depending on various imaging conditions. Thus for achieving more stringent adjustment, it is desirable that adjustment be carried out under an actual imaging condition (e.g., see Application paragraph [0004]). However, the white balance adjustment and the shading correction need to be carried out separately, which necessitates a complicated operation.

An exemplary aspect of this invention may provide a digital camera, in which, under a stringent image-pickup condition in which the white balance has to be set manually, the manual white balance adjustment and the manual shading correction can be carried out simultaneously to enable an image to be photographed to a high accuracy. It is also an object of the invention to provide a method for controlling the imaging in such a digital camera. Moreover, since the correction condition associated with a plurality of stop values may be formed and stored at the time of calibration imaging, change of the stop value on the occasion of actual imaging can be flexibly coped with without re-formulating the correction condition. Hence, an optimum photographed image may be obtained at the time of the manual adjustment (e.g. see Application paragraph [0014]).

II. THE PRIOR ART REJECTION

In rejecting claims 1-10 the Examiner alleges that the references render the rejected claims obvious. Applicants respectfully submit, however, that the Niikawa in view of Atherson et al. does not teach or suggest each and every feature of the claimed invention.

That is, Niikawa does not teach or suggest “*manual white balance adjustment*,” as recited in claim 1, and similarly recited in claim 6. This feature is important because an optimum photographed image may be obtained at the time of the manual adjustment.

Niikawa discloses a digital camera, in which a correction table selection condition is manually designed (col. 21, line 61-col. 22, line 4). The correction table is used for the shading correction (col. 20, lines 35-36). Manual shading correction of Niikawa is different from manual white balance adjustment mechanism, as claimed in the claimed invention.

Thus, instead of disclosing “*manual white balance adjustment controlling calibration imaging*,” (emphasis added by Applicants) as recited in claim 1, and similarly recited in claim 6, Niikawa discloses a manual shading correction mechanism.

Moreover, Niikawa does not teach or suggest “*generating the shading correction condition and the white balance adjustment condition for correcting the image signal to be generated at a time of actual imaging*,” (emphasis added by Applicants) as recited in claim 1, and similarly recited in claim 6. This feature is important because carrying out the white balance adjustment and the shading correction separately necessitates a complicated operation. Niikawa, instead, suggests that the user enters a focal length and an f-number at the time of capturing an image (col. 22, lines 1-2).

Matherson et al. teach a digital camera, in which the image is represented by three color planes or arrays (col. 3, lines 33-35). For each pixel in a characteristic plane, a calibration factor can be calculated that will reduce color-dependent vignetting (col. 3, lines 43-46).

However, Matherson et al. fail to disclose or suggest “*said controller producing, upon recognition that the operating information commands manual white balance adjustment controlling calibration imaging for imaging an object placed in front of the image pick-up lens, generating the shading correction condition and the white balance adjustment condition for correcting the image signal to be generated at a time of actual imaging*,” as recited in claim 1, and similarly recited in claim 6.

Indeed, the Examiner does not even allege that Matherson et al. teach or suggest this

feature. The Examiner merely relies on Matherson et al. for teaching of image adjustment based on the image signal generated by the image sensor (e.g., see Office Action at page 4, lines 5-7).

As Matherson et al. do not overcome the deficiencies of Niikawa, the combination of references fails to render the rejection claims obvious.

Therefore, Applicants respectfully submit that Niikawa in view of Matherson et al. does not teach or suggest (not render obvious) each and every feature of the claimed invention.

Furthermore, in rejecting claims 4 and 9, the Examiner alleged that the combination of references renders the rejected claims obvious. Even if the Examiner's above conclusion was correct, Niikawa in view of Matherson et al. still fails to teach or suggest the claimed invention.

That is, it would not be obvious, from the teaching of Niikawa in view of Matherson et al. to have "*the white balance adjustment condition associated with plurality of stop numbers*," as recited in claim 4, and similarly recited in claim 9.

Moreover, in rejecting claims 5 and 10, the examiner alleged that the combination of references renders the rejected claims obvious. Furthermore, even if the examiner's above conclusion was correct, Niikawa in view of Matherson et al. still fails to teach or suggest the claimed invention.

That is, it would not be obvious, from the teaching of Niikawa in view of Matherson et al. to have "*the white balance adjustment condition associated with the stop number used at the time of the actual imaging*," as recited in claim 5, and similarly recited in claim 10.

Therefore, Applicants respectfully submit that Niikawa in view of Matherson et al. does not teach or suggest (not render obvious) each and every feature of the claimed invention. Therefore, the Examiner is respectfully requested to reconsider and withdraw this rejection.

III. NEW CLAIMS

New claims 11-21 have been added to claim additional features of the invention and to provide more varied protection for the claimed invention. The claims are independently patentable because of the novel features recited herein.

Applicants submit that new claims 11-21 are patentable at least because of similar

reasons to those set forth above with respect to claims 1-10.

IV. FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicants submit that claims 1-21, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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